

**WHAT IS CLAIMED IS:**

1. A method of receiving multiple services according to a plurality of service types in an access terminal (AT) in a data only mobile telecommunication system having an access network (AN) for communicating with the AT on a radio channel and a packet data service node (PDSN) for providing a data service to the AT via the AN, the method comprising the steps of:

(1) establishing a connection for the data service with the PDSN and configuring a session for setting the plurality of service types having different traffic characteristics by the connection;

(2) generating a plurality of service instances for the different service types according to the session configuration; and

(3) exchanging data streams with the PDSN in a service instance corresponding to a currently provided service among the plurality of service instances.

2. The method of claim 1, wherein in the step (1), data streams that can be processed according to the session configuration are classified into a stream type for signaling, and a plurality of stream types for the plurality of service types.

3. The method of claim 2, wherein the plurality of stream types are a stream type for a conventional data service, a stream type for a voice call service, and a stream type for a video multimedia service.

4. The method of claim 1, wherein the step (2) comprises the steps of:

being assigned to a traffic channel in an idle state by the AN, generating a first service instance, and establishing a first traffic path for the first service

instance with the PDSN; and

generating a second service instance corresponding to the service type of a new service upon request for the new service according to the first service instance, and establishing a second traffic path for the second service instance  
5 with the PDSN.

5. The method of claim 4, wherein the second service instance generating step comprises the steps of:

transmitting to the PDSN via the AN a connection request message with  
10 the service type of the second service instance set; and

receiving a connection response message from the PDSN via the AN in response to the connection request message.

6. The method of claim 5, wherein the connection request message  
15 is transmitted in a connected state where a traffic channel has already been established.

7. The method of claim 1, further comprising the step of selecting one of the plurality of service instances generated according to the session  
20 configuration and terminating the selected service instance.

8. The method of claim 7, wherein the step of selecting and terminating the service instance comprises the steps of:

transmitting to the PDSN via the AN a connection close message with  
25 the service type of a service instance to be terminated; and

receiving a connection close response message from the PDSN via the AN in response to the connection close message and terminating the service instance.

30 9. A method of providing multiple services according to a plurality

of service types in a data only mobile telecommunication system having an access network (AN) for communicating with an access terminal (AT) on a radio channel and a packet data service node (PDSN) for providing a data service to the AT via the AN, the method comprising the steps of:

5           (1) configuring a first session for AT authentication between the AT and the AN, authenticating the AT according to the first session, and establishing a connection for the data service between the AT and the PDSN;

          (2) configuring a second session by the connection, for defining a plurality of service types having different traffic characteristics;

10          (3) generating the plurality of service instances set to different service types according to the second session; and

          (4) exchanging data streams between the AT and the PDSN in a service instance corresponding to a currently provided service among the plurality of service instances.

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10.       The method of claim 9, wherein in the step (2), data streams that can be processed according to the second session are classified into a stream type for a typical data service, a stream type for a voice call service, and a stream type for a video multimedia service.

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11.       The method of claim 9, wherein the step (3) comprises the steps of:

          assigning a traffic channel to the AT in an idle state by the AN, generating a first service instance, and establishing a first traffic path for the first  
25 service instance between the AT and the PDSN; and

          generating a second service instance corresponding to the service type of a new service upon request for the new service according to the first service instance, and establishing a second traffic path for the second service instance between the AT and the PDSN.

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12. The method of claim 11, wherein the second service instance generating step comprises the steps of:

transmitting from the AT to the PDSN via the AN a connection request message with the service type of the second service instance set; and

5 receiving a connection response message in response to the connection request message from the PDSN via the AN in the AT.

13. The method of claim 12, wherein the connection request message is transmitted in a connected state where a traffic channel has already  
10 been established.

14. A method of providing multiple services according to a plurality of service types in a data only mobile telecommunication system having an access network (AN) for communicating with an access terminal (AT) on a radio  
15 channel and a packet data service node (PDSN) for providing a data service to the AT via the AN, the method comprising the steps of:

transmitting data between the AT and the PDSN in traffic paths established for a plurality of service instances set to a plurality of service types by a connection for the data service;

20 transmitting from the AT to the PDSN via the AN a connection close message with the service type of a service instance to be terminated, upon request for termination of the service instance; and

terminating the service instance in the AT upon receipt of a connection close response message from the PDSN via the AN.

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15. A system for receiving multiple services, according to a plurality of service types in an access terminal (AT) in a data only mobile telecommunication system, the system comprising:

an access network (AN) for communicating with the AT on a radio  
30 channel and a packet data service node (PDSN) for providing a data service to

the AT via the AN;

said AN being adapted to

establish a connection for the data service with the PDSN and configure  
a session for setting the plurality of service types having different traffic  
5 characteristics by the connection;

generate a plurality of service instances for the different service types  
according to the session configuration; and

exchange data streams with the PDSN in a service instance  
corresponding to a currently provided service among the plurality of service  
10 instances.

16. The system of claim 15, wherein the data streams that can be  
processed according to the session configuration are classified into a stream type  
for signaling, and a plurality of stream types for the plurality of service types.

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17. The system of claim 16, wherein the plurality of stream types are  
a stream type for a conventional data service, a stream type for a voice call  
service, and a stream type for a video multimedia service.

20 18. The system of claim 15, wherein the AN is further adapted to  
assign the plurality of service instances for the different service types  
according to the session configuration to a traffic channel in an idle state,  
generate a first service instance, and establish a first traffic path for the first  
service instance with the PDSN; and

25 generate a second service instance corresponding to the service type of a  
new service upon request for the new service according to the first service  
instance, and establish a second traffic path for the second service instance with  
the PDSN.

30 19. The system of claim 18, wherein the AN is further adapted to

transmit to the PDSN a connection request message with the service type of the second service instance set; and receive a connection response message from the PDSN in response to the connection request message.

5           20.       The system of claim 19, wherein the connection request message is transmitted in a connected state where a traffic channel has already been established.

            21.       The system of claim 15, wherein the AN is further adapted to  
10 select one of the plurality of service instances generated according to the session configuration and terminate the selected service instance.

            22.       The system of claim 21, wherein the AN is further adapted to transmit to the PDSN a connection close message with the service type of a  
15 service instance to be terminated; and receive a connection close response message from the PDSN in response to the connection close message and terminate the service instance.

            23.       A system for providing multiple services according to a plurality  
20 of service types in a data only mobile telecommunication system, the system comprising:

                an access network (AN) for communicating with an access terminal (AT) on a radio channel and a packet data service node (PDSN) for providing a data service to the AT via the AN;

25           said AN being adapted to

                configure a first session for AT authentication between the AT and the AN, authenticate the AT according to the first session, and establish a connection for the data service between the AT and the PDSN;

                configure a second session by the connection, for defining a plurality of  
30 service types having different traffic characteristics;

generate the plurality of service instances set to different service types according to the second session; and

exchange data streams between the AT and the PDSN in a service instance corresponding to a currently provided service among the plurality of  
5 service instances.

24. The system of claim 23, wherein data streams that can be processed according to the second session are classified into a stream type for a conventional data service, a stream type for a voice call service, and a stream  
10 type for a video multimedia service.

25. The system of claim 23, the AN is further adapted to assign a traffic channel to the AT in an idle state, generate a first service instance, and establish a first traffic path for the first service instance between the AT and the  
15 PDSN; and generate a second service instance corresponding to the service type of a new service upon request for the new service according to the first service instance, and establish a second traffic path for the second service instance between the AT and the PDSN.

20 26. The system of claim 25, wherein the AN is further adapted to transmit from the AT to the PDSN a connection request message with the service type of the second service instance set; and receive a connection response message in response to the connection request message from the PDSN in the AT.

25 27. The system of claim 26, wherein the connection request message is transmitted in a connected state where a traffic channel has already been established.

28. A system for providing multiple services according to a plurality  
30 of service types in a data only mobile telecommunication system, the system

comprising:

an access network (AN) for communicating with an access terminal (AT) on a radio channel and a packet data service node (PDSN) for providing a data service to the AT via the AN;

5       said AN being adapted to

transmit data between the AT and the PDSN in traffic paths established for a plurality of service instances set to a plurality of service types by a connection for the data service;

transmit from the AT to the PDSN a connection close message with the  
10 service type of a service instance to be terminated, upon request for termination of the service instance; and

terminate the service instance in the AT upon receipt of a connection close response message from the PDSN.

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